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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,061	Applicant(s) ROBERTSON ET AL.	
	Examiner HUA FAN	Art Unit 2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner's Note

1. For examination purpose, claim 19 is treated as an independent claim because it incorporates all limitations of the preceding claim (claim 16).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Jaskiewicz et al (US publication 2003/0061491).

As to claim 15, Jaskiewicz et al discloses a distributed storage network comprising:

a plurality of interconnected computers (figure 1), each computer being operable to store data in one or more memories under the control of said computer ([0015], "A host electronic device is a system containing data which is typically accessed by a user from a remote location...host electronic devices back up all data on RAID sets...");

each of said computers having access to processor executable code ([0015], "mail server, web servers...software facility"), said code comprising:

a) data item reception code processable to receive a data item ([0015], "A host electronic device is a system containing data which is typically accessed by a user from a remote location"; [0019], lines 14-16, "requests storage from the storage allocator 3");

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b) data item storage requirements discovery code processable to find one or more requirements relating to said data item ([0019], lines 16-20, “storage location attributes”);

c) storage information provision code processable to provide storage information concerning one or more memories of said computer ([0015], lines 7-14, “also located on the host electronic device 2 is a list of storage devices and their associated attributes”);

d) comparison code processable to compare said data item storage requirements with said storage information provided by said computer ([0020], lines 1-5, “the requested storage attributes are compared with the attributes of the available storage locations”); and

e) storage decision code processable to decide whether to store said data item in said one or more memories in dependence upon said comparison ([0020], lines 3-17, whether or not allocate storage depends on whether a match has been found).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 10, 13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, as applied to claim 15 above, and further in view of Rhea et al (“Maintenance-Free Global Data Storage”).

As to claim 1, Jaskiewicz et al discloses a distributed storage network comprising a plurality of interconnected computers (figure 1), said computers including a plurality of host computers (figure 1, “Host Electronic Device”) and at least one client computer ([0019], lines

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16-31, "the user's request includes storage location attributes desired by the user. The request may be in the form of a specific request from a particular device or process"; it is to be noted that the Host Electronic Device can also act as the client computer in response to user's input request, as indicated in [0019], lines 16-31, "the network storage policy may be input into the storage allocator...systems administrator may select certain storage attributes to be applied to the network..."), wherein said client computer stores client code comprising:

a) storage initiation code executable to initiate storage of a data item on one or more of said plurality of storage devices ([0019], lines 14-20, "requests storage from the storage allocator...includes storage location attributes desired by the user...from a particular device or process"; [0015], lines 4-7, "data accessed by remote user" means both "read data" and "write data");

b) storage condition generation code executable to generate one or more interpretable storage conditions indicating characteristics of storage device suitable for storing said data item ([0019], lines 14-20, "An authorized user...requests storage from the storage allocator...includes storage location attributes desired by the user...from a particular device or process"); wherein each of said host computers stores host code including:

c) host computer characteristic provision code executable to provide host characteristic data indicating one or more characteristics of said storage device ([0019], lines 6-13, host storage allocator identifies and records characteristics of storage device); wherein at least one of said interconnected computers has:

d) condition interpreter code executable to interpret said one or more interpretable storage conditions in the light of said one or more host characteristics provided by said host computer

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and thereby to establish whether said storage device meets said storage conditions ([0020], lines 1-8, "After a storage request is received, the requested storage attributes are compared with the attributes of the available storage locations. A determination is made as to whether there is a match based on the comparison"); said host code further comprising:

e) data item storage code executable to store said data item in said storage device on the execution of said condition interpreter code finding that said storage device meets said requirements ([0020], lines 1-8, "If a match of the requested storage attributes is found in an available storage location, the storage location is allocated to a specific process or device in response to the request"; [0015], lines 17-20, "host electronic devices 2, 6, and 10 back up all data on RAID sets with specified attributes...").

Jaskiewicz et al does not expressly disclose the storage devices are themselves host computers. Rhea et al discloses each network node can act as a server that stores objects (page 43, left col., lines 9-12, "Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these").

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz et al, with the teachings disclosed by Rhea regarding each network node can act as a server that stores objects. The suggestion/motivation of the combination would have been to address common need for persistent storage by means of an Internet-based, distributed storage system, to let devices transparently share data and preserver information even when devices are lost or damaged (Rhea, page 40, left col., lines 12-18).

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As to claim 2, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said storage initiation code causes the execution of said storage condition generation code (Jaskiewicz, [0019], lines 14-19, “requests storage from the storage allocator...includes storage location attributes desired by the user...The request may be in the form of a specific request from a particular device or process” indicates the storage location attributes desired by the user sent from a particular device or process are tied up with the specific storage request, therefore generating such storage condition for the specific storage request is caused by the storage request generation), said storage initiation code further sending said storage condition with said data item to one or more of said host computers (Jaskiewicz, [0019], lines 14-19, “requests storage from the storage allocator...includes storage location attributes desired by the user...The request may be in the form of a specific request from a particular device or process” where the particular device or process requesting storage implies requesting storage of data items; also see Rhea, figure 1, “connected pools or storage domains, among which data freely flows”, page 44, left col., lines 26-29, “data would be replicated and geographically distributed to protect it from hardware failure...”).

As to claim 3, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which each of said host computers stores said condition interpreter code (Jaskiewicz, figure 1, “Host Electronic Device”; [0015], lines 1-12; [0020], lines 1-8, “Host Electronic Device 2”, as an example, contains condition interpreter code; “Additional host electronic devices 6 and 10”).

As to claim 4, Jaskiewicz-Rhea discloses a distributed storage network according to claim 3 in which each of said host computers further contains forwarding code executable, on the

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execution of said condition interpreter code finding that the host computer does not meet said conditions, to forward said data item and said storage condition to another of said host computers (Jaskiewicz, [0020], lines 8-17, checking whether storage conditions meet requirement, if not, dynamically reconfigure; Rhea discloses forwarding request by a network node, page 43, left col., lines 9-12, "Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these").

As to claim 5, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which at least one of said computers stores both said client code and said host code (Jaskiewicz, [0019], lines 16-31, "the network storage policy may be input into the storage allocator...systems administrator may select certain storage attributes to be applied to the network..."; Rhea, page 43, left col., lines 9-12, "Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these").

As to claim 10, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said condition interpreter code interprets said one or more interpretable storage conditions using schema data which indicates a common structure for said interpretable storage conditions (Jaskiewicz, figure 4, schema data indicating common structure such as device ID, storage location, and whether or not and which device/process the storage is currently allocated to, as also disclosed in [0022], lines 11-17).

As to claim 13, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said host computer characteristics include stored data item description data which describes data items already stored at said host computer (Jaskiewicz, figure 4, component

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64 indicates that storage or host (combined with Rhea, see rejection to claim 1), has assigned 200 Megabytes to process 25, which implies that zero or more bytes of data from process 25 is stored at this storage location).

Claim 16 is a method claim corresponding to the distributed storage network claim 1. Therefore it has been analyzed and rejected based upon the distributed storage network claim.

Claim 17 is a computer readable storage medium claim corresponding to method claim 16's limitations: steps a) and b). Therefore it has been analyzed and rejected based upon the method claim.

Claim 18 is a computer readable storage medium claim corresponding to method claim 16's limitations: steps c), d) and e). Therefore it has been analyzed and rejected based upon the method claim.

Claim 19 is a computer readable storage medium claim corresponding to method claim 16. Therefore it has been analyzed and rejected based upon the method claim.

6. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of ON (official notice).

As to claim 6, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said one or more interpretable storage conditions are stored at one or more of said computers (Jaskiewicz, [0015], lines 9-11, "Also located on the host electronic device 2 is a list of storage devices and their associated attributes"), but does not expressly disclose the storage is persistent. An official notice is taken there that it is a design choice to store data persistently.

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At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by ON regarding storing data persistently. The suggestion/motivation of the combination would have been to provide fail protection.

As to claim 7, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 6 wherein said persistent storage is provided by a database stored at each of said one or more computers providing persistent storage of said interpretable storage conditions (ON, it is a design choice to store data persistently in a database).

As to claim 8, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 6 in which one or more computers further stores condition editor code executable to provide a user with an interface enabling the user to update said interpretable storage conditions or to record new interpretable storage conditions (Jaskiewicz, [0019], lines 25-31, “systems admin may select certain storage attributes to be applied to the network from available choices in pull down menus”).

As to claim 9, Jaskiewicz-Rhea-ON discloses a distributed storage network according to claim 8 in which said client computer further stores said condition editor code (Jaskiewicz, [0019], lines 25-31, “The network storage policy may be input into the storage allocator 3 in a number of ways. The systems admin may select certain storage attributes to be applied to the network from available choices in pull down menus. Alternatively, the storage allocator 3 may accept input text instructions which are parsed to establish attributes to be applied to network storage operations” indicates the storage allocator on host computers stores condition editor code, and the host computer acts as client computer, also see Rhea, page 43, left col., lines 9-12,

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“Each network node can act as a server the stores objects, a client that initiates request, or a router that forwards messages, or as all of these”).

7. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of Chatterjee et al (US publication 20020099815).

As to claim 11, Jaskiewicz-Rhea disclose the claimed invention substantially as claimed as discussed in claim1, but does not expressly disclose action data indicating actions to be carried out by one of said computers on said host computer meeting said storage condition. Chatterjee et al discloses event action data indicating actions to be carried out when the event meets the condition defined in the event trigger list ([0025]).

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by Chatterjee et al regarding event action data indicating actions to be carried out when the event meets the condition defined in the event trigger list. The suggestion/motivation of the combination would have been to improve the user friendliness by allowing user to define these lists (Chatterjee et al, [0025]).

As to claim 12, Jaskiewicz-Rhea-Chatterjee discloses a distributed storage network according to claim 11 in which said rules data structure forms a component of a policy data structure which further includes event data indicating one or more events which must take place in order to trigger the execution of said condition interpreter code (Chatterjee, [0025], the event trigger list is the data structure that includes event data indicating one or more events which much take place in order to trigger the execution of interpreting action list and alarm list).

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8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaskiewicz et al, in view of Rhea et al, as applied to claim 1, and further in view of Stadel et al (US patent 6128590).

As to claim 14, Jaskiewicz-Rhea discloses a distributed storage network according to claim 1 in which said interconnected computers comprise computers having differing hardware architectures and operating system programs stored thereon (Rhea, figure 1, PC, PDA, cell phone have differing hardware architectures and operating system programs), but does not expressly disclose storing common machine emulation code executable to translate code executable on said common machine to code executable on the hardware architecture and operating system of the machine on which the emulation code is executed. Stadel et al discloses storing common machine emulation code portable and are therefore translated (recompiled) for the destination hardware (col. 3, lines 40-49, "The two other program parts C and D...are portable and are therefore translated (recompiled) for the destination hardware...NOP represents a dummy command on the destination hardware (emulation code)").

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to combine the teachings disclosed by Jaskiewicz-Rhea, with the teachings disclosed by Stadel et al regarding storing common machine emulation code portable and are therefore translated (recompiled) for the destination hardware. The suggestion/motivation of the combination would have been to improve code portability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUA FAN whose telephone number is (571)270-5311. The examiner can normally be reached on M-F 9am-6pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. F./

Examiner, Art Unit 2456

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2456